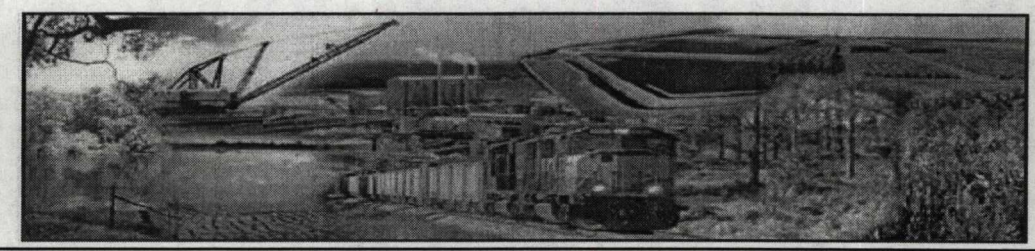
FIPR Phosphate Primer

Florida Institute of Phosphate Research



Phosphate Primer

Discovery of Phosphate in Florida

Some three decades after phosphate rock was first mined in England to be used in fertilizer, Dr. C. A. Simmons, who owned a rock quarry for building stone in Hawthorne, near Gainesville in Alachua County, had some of his rock sent to Washington, D.C. in 1880 for analysis. The rock was determined to contain phosphate.

Dr. Simmons launched the earliest attempt in Florida at mining and using phosphate in 1883. His attempts were short-lived, but by 1883 phosphate was also reported at other locations in Alachua, Clay, Duval, Gadsden and Wakulla counties.

Although Dr. Simmons is credited with the first discovery of phosphate in Florida, the Florida phosphate boom of the late 1800's was triggered after the 1889 discovery of high-grade phosphate hard rock by Albertus Vogt near the new town of Dunnellon in Marion County. Mr. Vogt had noticed fossil remains of prehistoric animals in a nearby spring that reminded him of similar finds near phosphate deposits from years earlier when his family had lived in South Carolina, where phosphate was first found in the United States. Rock samples taken while sinking a well on his property were determined to have very high phosphate content. Vogt and a few other local citizens began buying up land in the area and the first hard rock production began in 1889 by the Marion Phosphate Company. This was followed by the Dunnellon Phosphate Company, in which Vogt had ownership interest, in 1890.

News of this great find spread. Thousands of prospectors and speculators flooded the area and the great Florida phosphate boom had begun. By 1894 more than 215 phosphate mining companies were operating statewide.

The boom brought wealth. Land that had been selling for $1.25 to $5 an acre sold as high as $300 an acre. It was written in 1891 that "many a cracker homesteader who went to bed a poor man woke up in the morning to find himself a capitalist." The boom, however, was short lived. In 1892 there were 215 mining companies. By 1900 this number had dwindled to about 50 due to consolidation and over-capitalization.

Meanwhile, while surveying for a canal in 1881, Captain J. Francis LeBaron, chief engineer of a detachment of the U.S. Army Corps of Engineers, discovered river pebble in the Peace River, just south of Fort Meade, Polk County. Analysis of samples of this pebble confirmed the presence of phosphate. This discovery, though, did not draw much attention at the time.

In 1886 John C. Jones and Captain W. R. McKee, of Orlando, discovered high-grade phosphate on land along the Peace River between Fort Meade and Charlotte Harbor while on a hunting trip. This led to the formation of a syndicate known as the Peace River Phosphate Company by Jones, McKee and a close group of associates. They devised a

scheme whereby they could acquire as much land as they wanted while keeping land prices low. The group decided to tell local landowners that the roots of the saw palmetto bushes, that covered the land for miles around, were rich in tannic acid. Their story was to tell landowners that they intended to need to buy their land to remove the bushes and extract this tannic acid from the roots. They would then sell the land back to them for a song. Their plan worked so well that they had soon acquired forty-three miles of riverfront property.

Mining activity along the Peace River proceeded both in the river itself and on the adjacent land. So-called "river pebble mining" was the first to be exploited. In 1888, Arcadia Phosphate Company launched the first tentative mining operation in Bone Valley and made the first shipment of Peace River phosphate pebble about a year ahead of the Peace River Phosphate Company.

The Peace River Phosphate Company and DeSoto Phosphate Company came in 1889, but this phosphate discovery was kept relatively quiet. Rumors of phosphate in Central Florida spread, drawing prospectors and even a New York newspaper reporter. The reporter was told there was no phosphate, and his newspaper published the story.

As a result, Polk County's phosphate deposit took a back seat the first 15 years to the hard rock region to the north, and the men who gave the reporter the misinformation were buying all the central Florida land they could afford.

There were only two mining plants in the land pebble district in 1890: The Florida Phosphate Company at Phosphoria and the Pharr Phosphate Company at Pebbledale. Pharr made the first shipment of land pebble in May 1891.

Because of its high cost of production, river pebble mining could not compete with land pebble and hard rock. As a result, river pebble production, which peaked in 1893, ceased entirely by 1908.

Hard rock mining, which dominated the early years of the industry, also had high production costs relative to land pebble. In the early years, however, because of its high quality, it was able to demand higher prices from the export market. This market began to diminish in the early years of the century to such an extent that, by 1906, land pebble production had overtaken hard rock. Hard rock production continued to dwindle until mining finally ceased in 1965 in the Ocala-Dunnellon region. The mining of land pebble continues today in central and north Florida.

Phosphate mining did not come to north Florida in any significant way until the 1960s when Occidental Petroleum Company, like many petroleum companies at the time, was looking for a way to get into the fertilizer business because it was considered a profitable way to diversify. There were no land or acquisition opportunities available to get started in the central Florida mining district, but there were north Florida phosphate reserves that were close enough to the surface to make the area equally attractive as mining sites. Occidental went north and opened a mine in White Springs where it mined phosphate until 1995, when the Potash Corporation of Saskatchewan (PCS) purchased the operation.

Today, after decades of consolidation and market changes in Florida's industry, three phosphate companies maintain mining operations: Mosaic (a company formed when IMC Phosphates Company and Cargill Crop Nutrition merged in 2004), PCS Phosphate – White Springs, and CF Industries, Inc. A fourth company, U.S. Agri-Chemicals has fertilizer production operations in central Florida, but does not mine.

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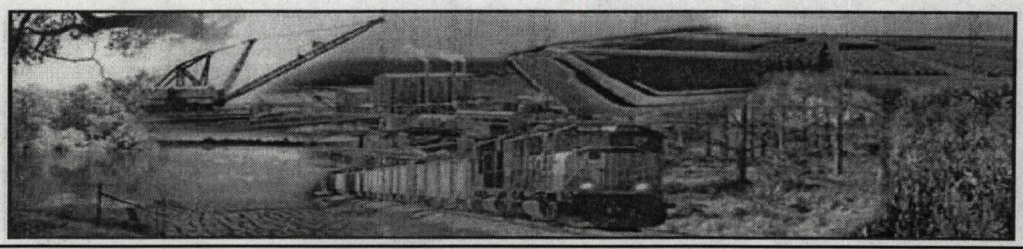

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Company Towns

In the early days of phosphate mining in Florida (1880 to 1920), there were a dozen or so major phosphate mining companies operating in the Bone Valley region of Polk and Hillsborough counties. Most of these companies owned villages, which provided housing for employees. The houses were one and two stories, arranged for one and two families, with water, bathrooms, gardens, fruit trees and other modern conveniences. There were village swimming pools, company hotels and hospitals.

These phosphate villages were built simultaneously with mine washing and drying equipment and other mine structures because the mines were isolated and workers needed to live near their jobs. There were not enough houses for all the workers so long waiting lists sometimes existed. Since the houses were for employees only, workers had to move when they retired, according to an article about living in company towns written by Freddie Wright in the March 1981 edition of the Polk County Historical Quarterlynewsletter.

"One former inhabitant described life in the village as 'country club living.' There were morning coffees, afternoon card parties and neighborhood barbeques. Everybody knew everyone else, even the names of all the children and pets. Children walked to school, there were no locked doors. It was a wonderful time for families with small children but more difficult for teenagers who wanted more than the limited diversions of a company town," according to Wright.

Rent was very low and all services such as electricity, water and garbage collection were provided for a nominal fee. In most communities it was the responsibility of the tenants to improve and maintain their own yards, while the companies kept up repairs and painting.

Mike Lloyd, Chemical Processing Research Director for the Florida Institute of Phosphate Research and a collector of local lore, likes to tell the story of the company manager's early morning visits to the homes in a company town. It is said that it was not unusual for the company manager to visit homes announced early on a weekday morning and run a white glove through the house, inspecting the quality of the housekeeping.

The towns began in the early 1900's and reached a peak in the 1920's.

Perhaps the earliest of these villages was at Tiger Bay near Fort Meade, which was built by the Palmetto Phosphate Company. Probably the largest of the company towns was Brewster with 163 company houses and a reported population high of 2,500. The town of Nichols, built by the Virginia-Carolina Chemical Company, consisted of about 120 houses and dates to the 1920s. Other company installations included Pierce, built in 1906 by the American Agricultural Chemical Company; Ridgewood, built by Davison

Chemical Company; a group of houses near Bartow built by Armour Fertilizer Company; and a large number of homes near Mulberry, built by International Minerals and Chemicals Company (IMC). IMC Phosphates in 2004 joined with Cargill Crop Nutrition to become Mosaic, now the world's largest producer of phosphate rock and phosphate crop nutrients.

Company towns were an integral part of Polk County life until the mid 1930's when unions negotiated their first contracts with phosphate companies, leading to the elimination of company commissaries and villages. The villages did not completely phase out, however, the 1950's when phosphate mines expanded operations rapidly and men no longer worked near the villages, according to Wright's article. Families began to move to nearby cities where there were more opportunities. As the need for company towns waned, the companies sold the houses to workers at reasonable rates and moved the homes to nearby communities.

Brewster was the last of the villages to close, according to Wright. In 1959, Arthur Crago, Mayor of Brewster for 15 years, wrote in the company newspaper:

> "I am sure many people will witness the passing of the company town with regret. There is, however, one advantage that will occur to many people. They will have an opportunity to purchase a home at a very nominal figure and as time goes on, will realize that owning a home excels living in a company owned dwelling. Also when retirement age is reached, workers will not be faced with need to find a new home."

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Timeline of Phosphate Communities

There were 400 mining companies in Florida in 1895. The number dropped to 81 in 1900 and about 30 in 1911, 17 of which were in central Florida. In the beginning, companies were mostly small and the mining was done by hand. These companies were later consolidated and sold to larger companies. By the late 1930s only three companies were left mining in the hard rock district of Florida around Marion county and six were operating in the pebble district of central Florida.

Following is a list of primary communities that emerged in the early days of land pebble phosphate mining in central Florida, according to Ray Driver, a Polk County native raised in Mulberry when it was a phosphate town. Ray Driver has written two chronological reports of the history of the phosphate area one of which is titled, "Bone Valley Comes to Life," which tells the story of life in company towns. There is a complete list of phosphate mines in Appendix B, and a list of Post offices in Appendix C of "Bone Valley Comes to Life."

Bone Valley - 1893, 1.5 miles NE of Mulberry, Purchased by Prairie Pebble Phosphate in 1902. Moved to Kingsford 1902.

Bradley - 1896, incorporated as Bradley Junction in 1912. Named from Bradley Brothers, important men in phosphate development.

Brewster - 1909, Plant and town ready by 1911. Named from B. H. Brewster, Jr., a major stock holder in Amalgamated Phosphate. Phased out as a community in 1961.

Christina - 1907, founded by C. G. Memminger, who first named it the Medulla Mine, then changed the name to that of his only child, Christina. Became part of Standard Phosphate and was phased out in the early 1930's.

Coronet - 1906, located three miles SE of Plant City. Began mining as Coronet Phosphate in 1908. C. G. Memminger became President and they also mined at Marylee (Memminger's wife's name), Saddle Creek, Hopewell. and Turkey Creek. Phased out in 1955.

Kingsford - 1894, one mile south of Mulberry. Lost its identity in 1903 when the Kingsford mine was purchased by Prairie Pebble Phosphate. Its post office was closed and it sort of merged with Mulberry. The name was changed from Mitchell to Kingsford by Major Lewis MClain.

Mulberry - 1852, became a settlement and became an important area for citrus, cattle, and lumber. The Florida Southern Railroad and the Winston and Bone Valley Railroad crossed near a large Mulberry Tree. Freight was labeled to discharge at the Mulberry Tree. J.J. Purdom of the Plant

Railroad constructed a Depot on the location in 1899, and named it Mulberry Station. Mulberry was incorporated as "Town of Mulberry," but in 1925 it became simply Mulberry.

Nichols - 1905. Nichols was named for a Fort Nichols that was located near the location of the Phosphate Mining Company. C. J. Memminger named Paul Hamilton Fuller as his general manager and charged him to construct a mine and a community. Although a post office is still open, the community was phased out in late 1950.

Pierce - 1906, named by Harry L. Pierce, located four miles south of Mulberry, phased out in late 1950s.

Ridgewood - Founded also by Harry L. Pierce after leaving his first venture into phosphate at Pierce. This new company was called Southern Phosphate Company and was the first to utilize the now necessary dragline. Phased out in early 1960s.

San Gully -1914, was the last community built by a mining company. It was purchased in 1917 by Southern Phosphate and was located where the Oakbridge development is in south Lakeland. It was phased out after WWII began.

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U.S. AGRI-CHEMICALS CORP.

Mining Company Will Likely Close in Polk

By KYLE KENNEDY
The Ledger

LAKELAND — U.S. Agri-Chemicals Corp. is planning to cease phosphate operations at its Bartow and Fort Meade facilities, a move that likely will precede the company's exit from Polk County.

USAC's departure would leave Mosaic Co. as Polk's last standing phosphate giant.

The news was announced Monday by Mosaic, which has a tentative agreement to pay USAC $84 million for the early termination of a phosphate rock contract. Officials with Fort Meade-based USAC declined to comment and referred questions to Mosaic.

"USAC informed us that they were going to shut down their plants altogether," said Linda Thrasher, a spokeswoman for Mosaic.

In addition, a Mosaic news release said it agrees to:

■ Issue $38 million in shares of common stock to USAC in exchange for various equipment, parts and roughly 3 million short tons of unmined phosphate reserves.

■ Pay USAC $10 million to settle an existing lawsuit concerning price disputes over the companies' rock sales agreement.

USAC will halt phosphate operations once it exhausts current inventories of raw materials, according to the Mosaic release. An industry insider estimated it would take about three months for the company to deplete its supplies.

Mosaic was formed when IMC and Cargill merged in 2004. IMC had entered into the phosphate rock sales agreement with USAC in 1994 and was supplying the company with about 2 million short tons of mined phosphate rock per year. The contract was extended to 2014 in 1999, and in 2000, USAC paid IMC a $57 million advance.

IMC last year exercised a contractual right to terminate the agreement early in October 2007 in exchange for $84 million. Mosaic officials said the move would allow the company to retain the phosphate rock normally reserved for USAC.

Although USAC officials have yet to confirm any plant closings, Mosaic Vice President H. Gray Gordon said his company has no

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by the Chinese government has plans to acquire USAC's Bartow "about 280 employees, [as] its and Fort Meade facilities. Gordon Bartow and Fort Meade sites. said he was unsure of what prompt Along with Mosaic, it is the last ed USAC's decision to cease active phosphate company in operations. Polk. CF Industries, of "It's probably strictly just a Zephyrhills maintains an office business decision," he said. in Bartow, but has a mine in The planned transactions be- Hardee County and a facility in tween USAC and Mosaic will be Plant City.

subject to board and regulatory approval.

USAC, a subsidiary of Sinochem Corp., which is owned

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